

### Abstract

An optical signal amplifier comprises a Semiconductor Optical Amplifier SOA used as semiconductor Amplified Spontaneous Emission ASE source. This SOA produces optical pumping seed which has to be amplified to get a large pump power. With such large pump power, it will be possible to counteract the loss in a fiber link of optical signals transmitted through it by applying said amplified pumping seed as Raman amplification on the optical signals. The invention further relates to a method for amplifying an optical signal comprising the combination of a semiconductor ASE source together with a high-power pump source. Latter will be used to amplify optical pumping seed to be produced by the semiconductor ASE source. Accordingly, the obtained amplified pumping seed will be used to act as a Raman amplification of optical signals.